

Si-O-C Aerogels for TPS of Reentry Vehicles, Phase I

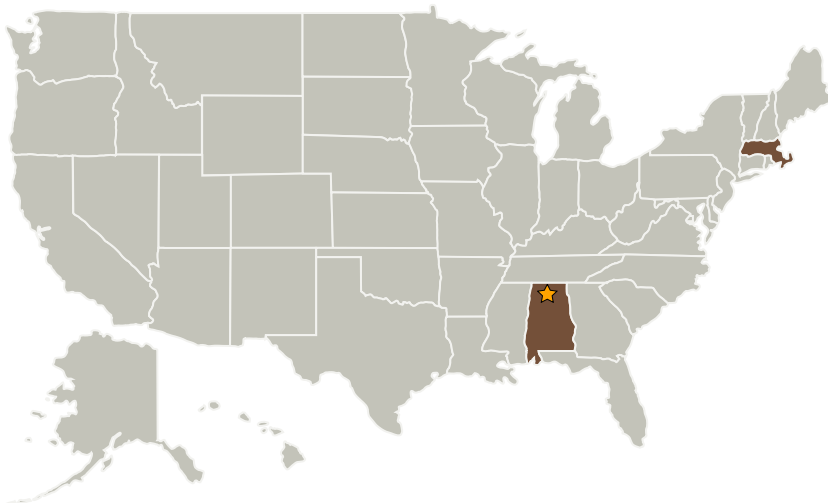
Completed Technology Project (2005 - 2005)



Project Introduction

The objectives of this proposal are to identify and develop breakthrough technologies that have potential to provide increased scientific return at lower cost, and to enable missions and capabilities beyond current horizons. Advanced thermal materials are needed as thermal protection system (TPS) materials for reentry. Aspen Aerogels Inc. proposes a particularly innovative lightweight aerogel material !V silicon oxycarbide aerogel that will advance the state-of-the-art for thermal protection. The material will have maximal operational temperature in air on the order of 1200 ?aC, will have low thermal conductivity at high temperatures and low density. Thermal stability of the material will be tested at conditions simulating the conditions of Earth reentry.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Marshall Space Flight Center (MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
Aspen Aerogels, Inc.	Supporting Organization	Industry	Northborough, Massachusetts



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center (MSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

Alabama

Massachusetts

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Dmitry Fomitchev

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.3 Thermal Protection Components and Systems
 - └ TX14.3.1 Thermal Protection Materials